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**YEARS OF SCHOOLING AND QUALITY OF GOVERNANCE:
A CASE STUDY FROM GLOBAL DATA**

A Thesis

**Submitted to the Faculty of the
Graduate School of Global Affairs and Public Policy
of The American University in Cairo
in partial fulfillment of the requirements for the
degree of Master of Public Policy**

By

Ahmed Zaki

Supervised By: Dr. Hamid Ali

Cairo, Egypt

May 23, 2016

Abstract

This paper examines the relationship between years of educational attainment and governance using panel data from 147 countries. The statistical model in this study analyzes the relationship between Average Years of Schooling, and the World Bank's Worldwide Governance Indicators that represent governance exclusively. We assess whether average years of schooling can significantly predict governance when using controls and fixed effects. We also use average years of primary schooling, secondary schooling, and tertiary schooling to assess whether or not a change in a specific educational level; primary, secondary, or tertiary, shows more significance in relationship to quality of governance. Based on this initial analysis we find that years of educational attainment in at least one of the educational levels predict quality of governance. We also carry out a second analysis using the same statistical model but divide the initial dataset into three subsets; "Free", "Partly Free", and "Not Free" countries, based on the Freedom House categorization. The results indicate that educational attainment is only a predictor of quality of governance in the "Free" countries subset. This indicates the need to focus on statistical analysis of country subsets with similar "deeply-instilled attitudes," as clarified by the revised version of modernization theory, in order to reach conclusive results.

Contents

Introduction	1
Chapter 1. Conceptual Framework and Hypothesis	4
Chapter 2. Literature Review	6
Education effect on Governance & Democracy	6
Education and Democracy	7
Challenging Correlation between Education & Democracy	10
Counter-argument to Acemoglu et al. (2005)	11
Population Growth & Democracy	12
Population Size & Democracy	13
Rents & Democracy	14
Modernization & Democracy	16
Chapter 3. Clarifying the Governance-Democracy Divide	18
Chapter 4. Data Sources	25
Chapter 5. Methodology	31
Chapter 6. Analysis	35
Control of Corruption	37
Government Effectiveness	38
Political Stability and Absence of Violence/Terrorism	39
Regulatory Quality	40
Rule of Law	41
Voice & Accountability	42
Chapter 7. Robustness Check	43
<i>Control of Corruption: Free, Partly Free, Not Free</i>	44
<i>Government Effectiveness: Free, Partly Free, Not Free</i>	46
<i>Political Stability & Absence of Violence/Terrorism: Free, Partly Free, Not Free</i>	48
<i>Regulatory Quality: Free, Partly Free, Not Free</i>	50
<i>Rule of Law: Free, Partly Free, Not Free</i>	52
<i>Voice & Accountability: Free, Partly Free, Not Free</i>	54
Chapter 8. Discussion	56

<i>Rejecting the Null Hypothesis</i>	56
<i>Negative Correlation Between Education, and V&A</i>	58
<i>Negative Correlation Between Education & Political Stability (Free States)</i>	59
<i>Control Variables and Worldwide Governance Indicators</i>	59
Chapter 9. Considerations	63
Chapter 10. Conclusion	65
Chapter 11. Recommendations	67
Appendices	68
Appendix 1: Worldwide Governance Indicators.....	68
Appendix 2: Freedom House Methodology.....	69
References	70

Educational Attainment & Quality of Governance

Introduction

Developing quality of governance has become the focus of international development organizations, donor governments, as well as national governments seeking to promote socio-economic development. If a country improves its quality of governance; provides corruption control, effective and efficient government institutions, sound investment regulations, and a functioning and just legal system, then international and local investment will flourish, and socio-economic development will ensue. This correlation has been supported by various empirical analyses including World Bank studies (Kaufmann, 2014).

Identifying the predictors that influence the quality of governance is therefore of paramount importance, as it would enable the advancement of good governance; spurring investment and the subsequent socio-economic benefits. However there is limited research on the predictors of the quality of governance. This paper therefore seeks to add to the body of knowledge on governance, and analyze whether educational attainment predicts quality of governance. In order to carry out this analysis we define governance as a separate concept from democracy due to the convergence of governance and democracy definitions. We then use the definition of

governance in order to determine the indicators by which quality of governance can be measured¹.

Measuring the effect of educational attainment on quality of governance is the main objective of this thesis. However the statistical model includes multiple control variables, and relevant correlations between these variables and the quality of governance are also examined and discussed.

The results of this research indicate that years of educational attainment have a significant positive influence on all Worldwide Governance Indicators that are exclusive to governance; Control of Corruption, Government Effectiveness, Regulatory Quality, and Rule of Law. A second layer of analysis shows that this relationship is only true for democratic countries, while absent for partly democratic and authoritarian countries. The findings support the revised version of modernization theory which implies that cultural variables and deeply-instilled attitudes among the public of a society play the most important role in a country's development, as opposed to a uniform variables that affect development across countries and cultures.

Chapter one will explain the conceptual framework as well as clarify the thesis statement.

Chapter two will address the literature review by stating the previous theories and statistical analyses that explain the relationship between education, and governance. In chapter three, governance is defined as a separate concept from democracy; a differentiation integral to this paper. Chapters four and five explain the data sources, and the method of analysis respectively.

Chapter six contains the analysis section of this paper. In chapter seven we carry out a robustness

¹ We use four out of the six World Bank Worldwide Governance Indicators that we define as being exclusive to governance, as explained in the literature review section.

test in order to check the consistency of the findings in different subsets of the original data. The discussion of both the analysis and the robustness check is included in chapter eight. Chapter nine mentions the consideration that might cause us to handle findings from this study with some caution. Finally chapters ten and eleven contain the conclusion, and recommendations respectively.

Chapter 1. Conceptual Framework and Hypothesis

This paper examines the relationship between years of educational attainment and composite measures of governance. Education is traditionally considered to be directly correlated to democracy, as well as indirectly correlated through the effect of education on economic development which in turn positively influences democracy. This paper examines whether the assumption that education will have a similar effect on quality of governance can be substantiated. We therefore measure the effect of education on governance as a separate concept from democracy. Our statistical analysis is therefore unique in that it seeks to first differentiate between composite measures of governance and democracy within the World Bank's Worldwide Governance Indicators, and then single out the significance of education on composite measures of governance only.

To analyze this significance we look at the relationship between Barro and Lee's (2013) Average Years of Schooling, and the governance outcomes as defined by the World Bank's Worldwide Governance Indicators, using panel data from 147 countries between 1996 and 2014. We assess whether Average Years of Schooling can significantly predict governance when using controls and fixed effects for countries and years. We also use Barro and Lee's (2013) Average Years of Primary Schooling, Secondary Schooling, and Tertiary Schooling to assess whether or not a change in a specific educational level (primary, secondary, or tertiary) shows more significance in relationship to quality of governance. Based on the subsequent analysis in this thesis the definition of governance only includes the following four Worldwide Governance Indicators; Control of Corruption, Government Effectiveness, Regulatory Quality, and Rule of Law.

We hypothesize that, all else equal, years of educational attainment will significantly predict the quality of governance, operationalized through the four Worldwide Governance Indicators that exclusively represent governance.

There are two main arguments on why educational attainment should improve governance. First if we assume that the predictors of democracy highlighted in modernization theory² are potentially the same predictors of governance, then we should expect that education would positively influence governance in the same way that education affects democracy. This assumption is based on the supposition that democratic states provide quality domestic institutions that enhance quality of governance (Bogaards, 2009; Bunce, 2000; Feng, 2001, 2003; Jensen, 2003, 2006). The other argument considers the fact that public employees throughout the various branches of government and who affect governance outcomes will perform their jobs better if they are more educated. Gerard (2012) highlights this relationship by stating that “actual functioning of the government depends on the overall education level of society;” as government is comprised of individuals who have graduated from the country’s school system, and who reflect the educational attainment levels in society. It is therefore intuitive to expect that a more educated society would lead to the existence of better calibers working in government and therefore better quality of governance.

² The modernization theory explanation of the correlation between education and democracy is expanded on in the literature review section.

Chapter 2. Literature Review

Education effect on Governance & Democracy

There is surprisingly limited research on predictors of governance in general and consequently on education as a predictor of governance. One study that stands out was performed by Gerard (2012) in which he examined the relationship between the Human Development Report variable “Expected Years of Schooling” and six Worldwide Governance Indicators in a 157 countries dataset. Gerard (2012) does this through a panel data analysis using country and year fixed effects to avoid endogeneity, and omitted variable bias. The study controls for three variables that affect quality of governance; GDP per capita, democracy, and life expectancy, and considers that the definition of governance includes the six Worldwide Governance Indicators. Gerard’s (2012) study concludes that “we cannot state with certainty that the variable Expected Years of Schooling predicts the majority of the Worldwide Governance Indicators” and that expected years of schooling is generally unimportant. The only exception was the strong relationship between government effectiveness and expected years of schooling; further analysis however, indicated that this relationship is being driven by Sub-Saharan African countries. The study also highlighted a strong relationship between regulatory quality and expected years of schooling in the Sub-Saharan dataset; indicating that examining subsets from the full dataset may lead to different conclusions.

As stated earlier we assume that the predictors of democracy could also potentially be predictors of governance, based on the supposition that democracies produce better institutions that in turn foster quality of governance. The next part of the literature review will focus on the traditional

claim of correlation between education and democracy as well as the most significant contemporary arguments and counter-arguments to this claim.

Education and Democracy

Conventional wisdom, as well as modernization and socialization theories suggest a strong correlation between education and democracy. Recent empirical studies have also supported this correlation, in addition to shedding light on the mechanisms by which education affects democracy. There are also a small number of recent studies challenging this correlation, and supporting a revised version of modernization theory.

The correlation between education and democracy has been detailed in literature since the early twentieth century. John Dewey in (1916) claimed that “high levels of educational attainment are a prerequisite for democracy” (Acemoglu, Johnson, Robinson, & Yared , 2005). In (1959) Seymour Martin Lipset introduced an expansion to this concept via his modernization theory; which stated that education leads to greater prosperity, which in turn leads to “political development in general and democracy in particular”(Acemoglu et al, 2005). Lipset (1959) went as far as to suggest that education could be considered a necessary condition for democracy. According to Lipset (1959) this was due to the fact that “education presumably broadens men's outlooks, enables them to understand the need for norms of tolerance, restrains them from adhering to extremist and monistic doctrines, and increases their capacity to make rational electoral choices” all of which are imperative to the functioning of a democratic state (Acemoglu et al, 2005).

Inglehart (1997) reiterated this finding and found that higher levels of education “produce a more articulate public that is better equipped to organize and communicate.” Barro (1999) and Przeworski, Alvarez, and Cheiboub (2000), also provided evidence consistent with this view.

These findings were also reinforced by contemporary studies; as Glaeser, Pomsetto, & Shleifer (2007) stated that across the world “the correlation between education and democracy is extremely high.” They utilize a variety of evidence to support this claim, most important of which is a time-series analysis of the relationship between education and democracy conducted by Barro (1997,1999) across 91 countries, and the Polity IV index of democracy developed by Jagers, and Marshall (2003). By analyzing the changes in both initial democracy and initial years of education, the writers found evidence suggesting that increasing educational attainment leads to democracy.

Other studies conducted by Kotzian (2011) showed similar findings. Utilizing data from the World Values Study (WVS) between 1995 to 1997, in 36 countries, Kotzian found “higher levels of diffuse support for democracy, but lower levels of specific support for their government, among the higher educated.” Kotzian (2011) also analyzed data from 43 Nations from the WVS from 2005 to 2007, and found that societies with higher level of education “are simultaneously more supportive of democracy in principle but less satisfied with the current governance.”

These findings were also reflected in recent studies conducted on various regions. Analysis of selected Arab countries showed a positive micro-level association between “educational attainment and support for democracy” (Tessler, 2002; Jamal, 2006). Empirical studies of post-

transition societies in Eastern Europe document “a positive relationship between levels of completed education and pro-democratic attitudes on the individual level” (Gibson et al, 1992). In Latin America, “formal education tends to be associated with greater support for democracy in Latin America” (Latinobarometro, 2010). Utilizing Data from the Afrobarometer survey for Malawi (2007) and a survey of 18 countries in Sub-Saharan Africa, Evans and Rose (2012) found large positive effects of formal schooling on support for democracy. Evans and Rose (2012) concluded that people’s level of schooling predicts their “endorsement of democratic and procedures and their rejection of non-democratic alternatives.”

In examining the mechanisms by which education affects democracy, empirical evidence showed that education plays a positive role in political engagement in developed countries (Almond & Verba, 1989). Acting through socialization, education is found to “have a positive effect on political participation” (Glaeser et al 2007), “as well as on trust and social engagement” (Helliwell and Putnam 2007), this is based on “survey data for the US for the last three decades of the 20th century” (Chzhen, 2013). Education also increases citizens’ awareness and attention of public affairs, where “more educated citizens appear to have more information on candidates and campaigns” (Milligan, Moretti, & Oreopoulos, 2004). Evans and Rose (2007) add that education plays an indirect role in the development and stabilization of democracies through fomenting support in the population, and equipping them with the ability to process information. For instance they claim that “the greatest aggregate gains in support for democracy are likely to be obtained by increasing the proportion of the population who complete primary education.” The comprehensiveness of these cross-country analyses spanning multiple decades prove that educational attainment is considered a “strong predictor of transition to democracy” (Glaeser et

al, 2007) and that education is a powerful predictor of permanent transitions from dictatorship to democracy” (Papaioannou and Siourounis, 2005). The relationship between educational attainment and quality of governance is expected to reflect the same correlation.

Challenging Correlation between Education & Democracy

Not all contemporary studies have supported the correlation between education and democracy; Acemoglu et al. (2005) challenged the modernization claims that high educational attainment is “both a prerequisite for democracy and a major cause of democratization.” They claimed that the “evidence is not robust to including fixed effects and exploiting the within-country variation” and that the evidence suggests that “the cross-sectional relationship between education and democracy is driven by omitted factors influencing education and democracy rather than a causal relationship.”

They also claim that if there was indeed a causal link between education and democracy then a country would become more democratic as its population becomes more educated. However based on their analysis of the “Freedom House democracy score between 1970 and 1995 versus the change in average years of schooling during the same time period” they concluded that as countries become more educated they show no greater tendency in becoming democratic.

The writers then go on to conduct an econometric investigation, where they conclude that the “cross-sectional relationship between schooling and democracy disappears when country fixed effects are included in the regression. These findings are in agreement with the revised version of modernization theory which implies that “certain cultural variables (deeply-instilled attitudes

among the public of a society) play an important role in democratization” as opposed to specific variables that uniformly affect democracy across countries and cultures (Inglehart & Welzel, 2010). Meaning that there shouldn’t be an expectation that one variable such as education will monolithically predict a specific outcome worldwide, be it democracy or quality of governance.

Counter-argument to Acemoglu et al. (2005)

Glaeser et al. (2007) provide criticism to the analysis of Acemoglu et al. (2005). They state that Acemoglu et al.’s analysis results “depend on a short time series and extreme persistence in the education data.” Moreover, Glaeser et al. state that the Acemoglu et al. should have used a different estimator³ in their analysis; they show how if they had used this estimator then education would have been found to be a predictor of democracy even when permanent country effects are taken into account. Glaeser et al. therefore conclude that once the Acemoglu et al. findings are adjusted, they reinforce modernization theory on the correlation of education with democracy. Their study concludes that education is “highly correlated with democracy in both cross-section and most recently estimated panel regressions” but that “the best econometric evidence suggests that this effect is causal.”

We expect that the statistical model in this thesis will show that an increase in years of educational attainment will positively influence the quality of governance; reflecting the same relationship between education and democracy. Moreover the statistical model will also include independent variables for GDP per capita, population growth, population total, and rent as

³ Glaeser et al. (2007) state that Acemoglu et al. (2005) should have used the Blundell-Bond (1998) system GMM estimator instead of the General Method of Moment (GMM) estimator which is based on the Arellano-Bond (1991) first-difference GMM estimator.

percentage of GDP for which the relationship with quality of governance will also be examined. The next part of the literature review will therefore focus on the relationship between these variables and democracy; again using democracy as a proxy for governance based on the assumption that democracies produce better institutions that lead to better quality of governance.

Population Growth & Democracy

Even though there is empirical research on the effect of population growth on democracy, the literature shows conflicting results (Cranmer & Siverson, 2008). Some studies have highlighted that a growing population will put a strain on the nation's resources, which would eventually lead to conflict that would significantly undermine democracy. Frey and Al-Mansour (1995) by analyzing cross-national data concluded that rapid population growth had both a strong and persistent "destabilizing impact on democracy independent of the level of economic development and other variables." Their study suggests that countries with rapidly expanding populations will likely have less democracy. These views are consistent with the Neo-Malthusianism view that sees population growth causing political instability and violence due to the scarcity of resources.

However Alex de Sherbinen (1995) considers population growth alone to be too simple "to capture the complex relationships" involved in creating political conflict. Goldstone (2002) agrees with this view, clarifies that only certain instances of population growth cause conflict, and reiterates that overall population growth does not generally lead to conflict.

On the other hand, Simon and Kuran (2000) are of the opinion that population growth affect the structures of “markets, law, tradition, and political institutions” in a positive way through the evolution of technology. This perspective portrays a directly proportional relationship between population grow and master over nature and its resources, where the two reinforce each other positively (Anligicia, 2016). This perspective is corroborated by economic perspectives suggesting that a growing population is needed to inject the market with a larger youthful population able to support economic growth.

In the analysis we expect population growth to be a positive indicator of the quality of governance.

Population Size & Democracy

The literature generally shows a negative relationship between population size and democracy. Cross-national studies have demonstrated that “a nation’s population size has a negative impact on voter turnout” (Blais & Dobrzynska, 1998). Dahl and Tuft (1973) corroborate these findings by stating that a nation’s population size causes a micro-level response; where smaller sized populations “enhance citizen’s citizens’ psychological and actual involvement in politics,” as well as a macro-level response where “smaller size encourages the political elite to be responsive to the mass and the political institutions to be efficient.”

These micro-level and macro-level responses in small sized populations emerge as a result of “reduced communication costs between the masses and the elite”, socioeconomic characteristics as dimensions of size (reduced stress on resources), and that smaller democracies increase

people's share in power; however this last benefit is limited to already established democracies (Matsubayashi, 2007).

We therefore expect a negative correlation between population size and the quality of governance.

Rents & Democracy

The bulk of the literature suggests a negative correlation between high resource rent in a state and democracy. This claim is supported by Aslaksen and Torvik (2006) who studied how resource abundance affects choices between conflict and democracy, concluding that resource wealth makes conflict more likely thus impeding democracy, this is known as the resource curse. The logic behind these findings is that resources provide an incentive for political players to challenge the ruling class in order to access the wealth provided by the state's abundant resources.

Another argument for the resource curse is that political leaders in democracies have more constraints in exacting rent and preventing entry of other into the ruling class. Therefore the ruling classes in resource rich countries are more likely to prevent entry through authoritarian measures even if they are democracies (Tsui, 2008). The same relationship causes resource rich dictators to entrench their authoritarianism and oppose democratic development as they have much more to give up if they lose power than authoritarians of resource-poor countries (Aslaksen and Torvik, 2006; Mulligan and Tsui, 2008). Barro (1999) and Ross (2001) support the "oil-impedes-democracy hypothesis" via cross-country statistical analysis models while

Ramsay (2006) also concludes similar results utilizing an analysis of short run variations in oil prices.

The above-mentioned arguments both support the claim that the resource curse impedes democracy; however they propose two divergent pathways by which this occurs. In some cases resources rents cause the entrenchment of authoritarianism such as oil-rich gulf countries thus impeding democracy via preventing political entry, while in others by causing perennial attempts at overthrowing the government such as oil-rich countries like Nigeria, Chad, and Angola (Tsui, 2010). The literature on the resources curse seems to suggest that resources rents simultaneously cause authoritarian stability as well as conflict; two seemingly contradicting views.

Tsui (2010) assumes that natural resource wealth is actually a blessing that could also become a political curse depending on the existence of good institutions in the state, thus challenging that resources rent will always cause impedance to democracy . Other challenges to the resource curse were presented by Alexeev and Conrad (2009), Haber and Menaldo (2007) and Herb (2005), who question the validity of earlier statistical analyses due to endogeneity in the models.

In the analysis we expect an increase in resources rent as a percentage of GDP to be negatively correlated to the quality of governance

Modernization & Democracy

Earlier we discussed modernization theory and the support it gives to the causal relationship between education and democracy. Modernization theory also suggests that increased economic development and modernization in a state will be correlated with an increase in democracy.

The literature on the effect of economic development and modernization on democracy is well-established and is substantiated by a multitude of empirical evidence (see Bollen 1980; Bollen and Jackman 1985; Burkhart and Lewis-Beck 1994; Coppedge 1997; Diamond 1992; Huntington 1984; Jackman 1973; Lipset 1959; Lipset, Kyoung Ryung, and Torres 1993; Londegran and Poole 1996; Przeworski and Limongi 1997; Przeworski et al. 2000; Stephens, Rueschemeyer, and Stephens 1999).

However, a revised version of modernization theory again challenges these claims (Inglehart & Welzel, 2010). Acemoglu et al (2000) state that Modernization theory needs to be revised as there are reasons to suggest that a society's "institutional and cultural heritage is remarkably enduring" and is the main predictor of economic development and democracy. First, they consider modernization to be non-linear; not necessarily moving in one direction; where modernization could bring about bureaucratization, centralization of authority, hierarchy, or a move from "traditional to secular-rational values." Second, they state that even though economic development brings somewhat predictable changes in people's worldviews "a society's religious and historic heritage leaves a lasting imprint." Third, they clarify that modernization is not synonymous with Westernization, where East Asia countries have had the highest economic growth rates. They therefore advise that we shouldn't have ethnocentric conceptualizations of

the political systems that develop as a result of modernization. Finally they use historical examples to show that industrialization has previously brought about “fascism, communism, theocracy or democracy. They therefore conclude that post-industrial society brings about certain socio-cultural changes that could make democracy more probably, however it is by no means a given causal relationship.

In the analysis we expect a positive correlation between GDP growth per capita and urbanization as independent variables indicating modernization on one side and quality of governance on the other, following the conventional wisdom of modernization theory.

Chapter 3. Clarifying the Governance-Democracy Divide

Since the late 1980s the term “governance” has become prominently featured in academia, and international development-assistance agencies. Governance however is rarely used as an exclusive concept, and is usually coupled with democracy. These two terms have been commonly paired to describe work in political development to extent that this subfield has become known as “democracy and governance” or “D&G” for short (Plattner, 2013). This coupling of the terms without demarcation as well as the multitude of definitions available for governance, have made it increasingly difficult to provide a precise definition for governance by itself.

This section will examine definitions of both governance and democracy, in order to differentiate between convergences in the existing definitions of both terms. Taking the available definitions of governance into consideration, and relating it to the evolution of the definitions for democracy, we find that governance and democracy are in fact clearly differentiated. By the end of this section we will identify an exclusive definition of governance that can be utilized in setting indicators for measuring the quality of governance.

The term governance became a keyword for international development organizations, donor governments and academia when it reemerged in 1992 in a landmark World Bank report titled; “*Governance and Development.*” The report defined governance as “the manner in which power is exercised in the management of a country’s economic and social resources for development,” more importantly however the report stated that “good governance, for the World Bank, is

synonymous with sound development management” (World Bank, 1992). This provided the base upon which the Worldwide Governance Indicators were later developed.

Throughout the 1990s however governance in academia came to mean almost anything as researchers from the new institutionalist and network tradition equated it with all the stages of the dynamic processes of political decision-making (van Doeveren, 2011). This decision-making process was far from being clearly defined; it encompassed the activities of a wide spectrum of state and non-state actors, which were all considered to be under the umbrella of governance. Scholars therefore could assign any definition to governance as long as it related to this decision-making processes (Easton 1965; Hirst 1994; Kickert, Klijn, and Koppenjan 1997; Klijn 2002, 151; Kooiman 2003; Marin and Mayntz 1991; Pierre and Peters 2000; Rhodes 1997; Sorenson 2006).

Fukuyama (2004) was of the opinion that governance can be defined in terms of improving the capacity of states. In 2013 Fukuyama published a profusely discussed essay titled “*What Is Governance?*” in which he expanded on his original definition and stated that governance needs to be specifically defined in terms of institutions that use power; the executive branch and its bureaucracies. He also suggested that for governance indicators, one should analyze bureaucratic capacity and autonomy.

Other scholars considered good governance to be an offshoot from democracy and synonymous with responsive governance (Orji, 2009). With the definition of responsive governance being the implementation of rule of law, the existence of a just and efficient judicial system, “the

promotion of broad and popular involvement in political, social and economic processes; the development of the capacity to manage development; and the promotion of a culture of accountability and transparency in the management of public affairs” (Oyugi, 2004).

Good governance has also been recently defined as an extension of the dichotomy of democracy and market-based economy, where political pluralism “disperses power via elections”, and economic reforms “disperse wealth through competition” (Austin, 2001). This dichotomy has been defined differently by the United States, European Union, Commonwealth Heads of Government, IMF, the World Bank and the UN. However all definitions are based one way or another on the dichotomy of democracy and market-based economy (Austin, 2001).

On the other hand democracy definitions include minimalist definitions, whereby “the democratic method is that institutional arrangement for arriving at political decisions in which individuals acquire power to decide by means of competitive struggle for the people’s vote” (Schumpeter, 2003[1976]). This definition considers democracy merely the institutions and method of selection of government (chief executive office and legislative body), and not the mode of rule that transpires as a result. This could be considered a definition of electoral democracy. Minimalist definitions also focus on “contestation” meaning that opposition must have some chance of gaining office as a result of elections (Przeworski et al, 2000).

Deliberative democracy -another conceptual definition of democracy- requires reasoning for mutually acceptable policy decisions among the polis and/or their representatives (Gutmann &

Thompson, 1996). The focus of this definition of democracy is universal suffrage, civil liberties, and there is no discrimination against any citizen.

Dahl (1989) adds the dimension of “enlightened understanding” to the democracy definition.

This requires that each voting member should adequately understand the issues and that there is “equal opportunities for discovering and validating (within the time permitted by the need for a decision) the choice on the matter to be decided that would best serve the citizens’ interests.”

Democracy definitions however have recently expanded to include indicators of governance (Bogaards, 2009; Merkel, 1999, 2004). For instance definitions of democracy now include rule of law and superior institutions, two concepts that critically influence both development trajectories and the decisions of where to operate by non-state actors such as multi-national conglomerates (Jensen, 2006). This expansion in the definition came as a result of the profusion of literature on improvement of economic outcomes (growth, trade, and investment) as a result of offering guarantees to economic actors; in the form of “rule of law, controlling corruption and providing efficient bureaucracies” (Barro, 1991; Kaufmann, Kray & Zoido-Lobaton, 1999; Knack & Keefer, 1995; Li & Filer, 2007; Wei, 2000). The teleological argument was that these guarantees and quality domestic institutions were caused by democracy, and therefore should naturally be part of the definition of democracy (Bogaards, 2009; Bunce, 2000; Feng, 2001, 2003; Jensen, 2003, 2006). Simultaneously quality domestic institutions were also grouped under definitions of governance (Kaufman et al, 1999).

The abundance and convergence of governance and democracy definitions has therefore caused a continuous and expanding convolution of the concepts of governance and democracy

(Bogaards, 2009). This is exasperated by the inclusion of elements of governance when measuring democracy, as well as elements of democracy when measuring governance (Baird, 2012) by international institutions (Kaufman, Kray & Mastruzzi, 2006) as well as scholars (Bogaards, 2009; Bunce, 2000; Diamond & Morlino, 2005; Merkel, 2004). The multitude of definitions has created difficult for anyone trying to assess what good governance really is (Kjær, 2004). It is therefore imperative to clarify clear interpretations of democracy and governance before determining causal relationships between any of these two concepts and predictors of a positive development trajectory for either of them.

Baird (2012) makes a distinction between democracy and governance at the institutional level, where he delineates governance institutions as the “the core domestic institutions that facilitate government competency and economic efficiency.” He posits that quality domestic institutions conducive to competency and efficiency, exist regardless of regime type in varying degrees of quality, and are therefore part of governance institutions rather democratic ones (Baird, 2012). This argument is substantiated by Swedish scholar Bo Rothstein (2011) in his extended comparison of dictatorial Singapore and democratic Jamaica; two former British colonies that similarly suffered from poverty at the time of their independence in the 1960s. Autocratic Singapore has become a wealthy nation and continuously scores high on good governance indicators, while democratic Jamaica has remained poor with low governance ratings (Rothstein, 2011). Similarly democratic states are not immune from inferior governance which comes about as a result of incompetence and dishonesty, as well as inconsistent or poor policy choices. Rothstein (2011) goes on to say that there is no “particular reason to think that democratic electorates are especially given to making wise or consistent policy choices or indeed to electing

the best people to office”. This paper agrees with the intension that quality domestic institutions that guarantee rule of law and quality bureaucracy are governance institutions and should not be considered institutions of democracy (Bunce, 2000; Bair, 2012; Plattner, 2013).

In this thesis for purposes of measuring quality of governance we will utilize the World Bank’s definition of governance albeit with some refinement based on Baird’s (2012) recommendations and perspectives presented by Bunce (2000), Rothstein (2011), and Plattner (2013). The World Bank definition of governance is of importance as the World Bank was the first entity to consider good governance as a policy strategy and to subsequently develop a practical definition with measurable indicators that could be used as “normative criteria to be fulfilled by countries that received its aid” (Williams and Young 1994; van Doeveren, 2011). Governance according to the World Bank is defined as:

...the traditions and institutions by which authority in a government is exercised. This includes (1) the process by which governments are selected monitored and replaced, (2) the capacity of the government to effectively formulate and implement sound policies, and (3) the respect of the citizens and the state for the institutions that govern economic and social interactions among them. (Kaufmann et al, 1999).

The World Bank elaborates further on its theory of governance by clarifying the following indicators for its definition: Control of Corruption, Government Effectiveness, Regulatory Quality, Rule of Law, Political Stability, and Voice and Accountability (Kaufman, Kray & Mastruzzi, 20011).

However as stated earlier we need to reconsider that the World Bank Governance indicators can all be included in the governance definition. For example since the Voice & Accountability indicator intends to capture citizen participation in the selection of the government (Kaufmann et

al, 1999) it could be considered a measure of democracy and not of governance. Furthermore when considering the indicator of Political Stability, this thesis adheres to Haggard, MacIntyre & Tiede's (2008) perspective of the futility of analyzing institutions of governance; "if the agents that maintain or use these institutions are not secure" and therefore regards this indicator as also separate from governance.

Therefore for this analysis we will only consider "control of corruption (CC) , government effectiveness (GE), regulatory quality (RQ), and rule of law (RoL)" as indicators of governance; as these indicators represent the "the core domestic institutions that facilitate government competency and economic efficiency" (Baird, 2012).

Chapter 4. Data Sources

Worldwide Governance Indicators: In the analysis we use the Worldwide Governance Indicators that were developed by Kaufmann et al. (2006). The Worldwide Governance Indicators are available for 215 countries from 1996 to 2014, and are produced every two years from 1996-2002 and annually until 2014. The Governance Indicators are categorized into six dimensions of governance: Control of Corruption, Government Effectiveness, Political Stability and Lack of Violence, Regulatory Quality, Rule of Law, and Voice and Accountability. These indicators comprise the different elements of governance that Kaufmann et al. consider to be important in measuring and understanding effective governance (The World Bank DataBank, 2016). For the purposes of the analysis we only consider the following four indicators; Control of Corruption, Government Effectiveness, Regulatory Quality, and Rule of Law to be governance indicators. For definitions of each of the six indicators, see Appendix 1. (The World Bank DataBank, 2016)

The Worldwide Governance Indicators are perception-based indicators; based on several hundred variables obtained from 31 different data sources, capturing governance perceptions as reported by survey respondents, nongovernmental organizations, commercial business information providers, and public sector organizations worldwide (Kaufmann et al, 2011). For instance sources for the Worldwide Governance Indicators involve collating firm-level and household level surveys, including publicly available surveys such as the World Economic Forum Global Competitiveness Report, the Gallup World poll, as well as input from commercial business information providers such as Political Risk Services, and Global Insight, and organizations such as Freedom House, and Global Integrity, as well as public sector and country-

level research organizations (The World Bank DataBank, 2016). Statistical analyses utilizing these indicators should be interpreted cautiously as they are constructed and composite, in addition to being perception-based. These indicators are estimated between -2.5 and 2.5, where higher values indicate higher quality of governance, in order to aid in interpretation we measure coefficients of the indicators using standard deviations from the mean.

Years of Educational Attainment (age 15+):

The main explanatory variables are the education variables for Years of Schooling; Total Average, Primary, Secondary, and Tertiary. The panel data sets for these variables of educational attainment were developed by Barro and Lee (2013) and have been updated for 146 countries from 1950 to 2010. They utilize information from consistent census data “disaggregated by age group, along with new estimates of mortality rates and completion rates by age and education level” (The World Bank DataBank, 2016). In order to ensure accuracy they compare their estimates with their previous ones (Barro and Lee, 2001) as well as alternative measures (Cohen and Soto, 2007). The following is a description of the four educational attainment variables utilized in this analysis:

Average Years of Schooling: the total average years of education completed among people over age 15.

Average Years of Primary Schooling: the average years of primary education completed among people over age 15.

Average Years of Secondary Schooling: the average years of secondary education completed among people over age 15

Average Years of Tertiary Schooling: the average years of tertiary education completed among people over age 15

The primary relationship that will be tested is between the educational attainment variables and the four Worldwide Governance Indicators as per our definition. However there are other theoretical influences on governance, therefore the primary control variables used are Population Growth, natural log of Total Population, natural log of GDP per Capita Growth, Health Expenditure percent of GDP, Urban Population percent of Total, Total Natural Resources Rents percent of GDP, and the Polity IV variable; Polity.

Population Growth: According to the World Bank Dataset Website (2016) this indicator is defined as: “Annual population growth rate for year t is the exponential rate of growth of midyear population from year t-1 to t, expressed as a percentage.” The total population measures used in calculating this variable is based on the same definition of Total Population below.

Total Population: Total population is based definition of population that considers all residents to be part of the population regardless of legal status or citizenship, while refugees are considered to be part of the population of the country of origin (The World Bank DataBank, 2016). Moreover the values shown in the data are midyear estimates. This indicator is compiled from the following sources:

“(1) United Nations Population Division. World Population Prospects, (2) Census reports and other statistical publications from national statistical offices, (3) Eurostat: Demographic Statistics, (4) United Nations Statistical Division. Population and Vital Statistics Report (various years), (5) U.S. Census Bureau: International Database, and (6) Secretariat of the Pacific Community: Statistics and Demography Programme” (The World Bank DataBank, 2016).

GDP per Capita Growth: The Annual percentage growth rate of GDP at market prices based on constant local currency where aggregates are based on constant 2005 U.S. dollars. The GDP used in creating this indicator is “the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products (The World Bank DataBank, 2016). GDP is calculated without “making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources” (The World Bank DataBank, 2016). Data for this indicator is compiled from the World Bank national accounts data, and OECD National Accounts data files (The World Bank DataBank, 2016).

Health expenditure: Total recurrent and capital spending from “government (central and local) budgets, external borrowings and grants (including donations from international agencies and nongovernmental organizations) and social (or compulsory) health insurance funds, as percent of GDP (The World Bank DataBank, 2016). Data is compiled from the World Health Organization Global Health Expenditure database (see <http://apps.who.int/nha/database> for the most recent updates). This indicator will only be used for control, and the correlation between it and quality of governance will not be measured.

Urban Population: The total number of people living in urban areas as defined by national statistical offices. This indicator is calculated using “World Bank population estimates and urban ratios from the United Nations World Urbanization Prospects” (The World Bank DataBank, 2016).

Total Resources Rent: The sum of “oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents (The World Bank DataBank, 2016). Estimates are based on the sources and methods described in "The Changing Wealth of Nations: Measuring Sustainable Development in the New Millennium” (The World Bank DataBank, 2016).

Polity: The Polity IV index is a composite, perception-based indicator that uses historical data to determine a country’s democracy and autocracy levels. The Polity variable which we use in this analysis were developed by subtracting a country’s “Autocracy” score from the “Democracy” score as defined by Marshall, Gurr, and Jagers (2015). The Polity IV index is calculated for 162 countries, and goes back to the 1800s for some country. As the Polity indicator is perception-based caution needs to be taken when interpreting the results of the analysis.

The Polity scores are determinant on competitiveness of executive recruitment, openness of executive recruitment, constraints on chief executive, and competitiveness of political participation (Marshall et al, 2015). This indicates that Polity scores depend on the minimalist definitions of democracy that focuses on democratic electoral mechanisms of choosing the chief executive and legislative body, as well as “contestation” where opposition have a chance of gaining office as a result of elections (Schumpeter, 2003[1976]; Przeworski et al. 2000).

The Polity indicator does not include aspects of plural democracy “such as the rule of law, systems of checks and balances, freedom of the press” as these are considered a means to, or specific manifestations of the general principles included in the indicator (Marshall et al. 2015).

This is beneficial to the analysis as we already include Worldwide Governance indicators for rule of law, and voice and accountability.

Sample Analyzed: This analytical study uses 147 countries only, because the 215 countries in the Worldwide Governance Indicators dataset do not all have data for educational attainment consistently throughout the period being analyzed.

Chapter 5. Methodology

This study uses panel data fixed effects regression models in order to measure the relationship between years of educational attainment and the Worldwide Governance Indicators. The Worldwide Governance Indicators are used as dependent variables, while the key explanatory variables are the years of educational attainment variables. This study also measures the relationship between the dependent variables and the control variables; population growth, log of total population total, log of GDP per capita growth, total resources rent percent of GDP, and urban population. Health expenditure percent of GDP is used as control only, and the relationship between it and quality of governance will not be evaluated.

The models have fixed effects for both countries and time (years) in order to remove country-specific characteristics that may or may not influence the predictor variables as well as the effects of time-invariant characteristics (Princeton, 2016). Therefore any unobserved heterogeneity affecting either governance or education within a country will be accounted for by country fixed effects. While global and/or regional effects on governance and education are accounted for using time (years) fixed effects. All the datasets used throughout the analysis were “Strongly Balanced” indicating that there was sufficient data for each country to run the regression.

Each of the Worldwide Governance Indicators is regressed with the main independent as well as control variables for a total of six models. For each model we measure the effect of Average Years of Schooling, Average Years of Primary Schooling, Average Years of Secondary Schooling, and Average Years of Tertiary Schooling separately along with the same controls, on

the Worldwide Governance indicators. The following table contains a guide to the acronyms used in the models' equations along with their descriptions:

Acronym	Description
CC	Control of Corruption Estimate
GE	Government Effectiveness Estimate
RQ	Regularity Quality Estimate
RoL	Rule of Law Estimate
VA	Voice and Accountability Estimate
PV	Political Stability and Absence of Violence/Terrorism Estimate
EduAttainmet	Educational attainment is measured via four independent variables of Average Years of Schooling, Average Years of Primary Schooling, Average Years of Secondary Schooling, and Average Years of Tertiary Schooling completed among people over age 15
PopGrowth	Population Growth; percent of total population
LogPopTotal	Total Population; all residents of a country
LogGDPPERCapitaGrowth	GDP Per Capita Growth; Annual percentage growth rate of GDP
HealthExp	Government Health Expenditure as percent of GDP
UrbPop	Percent Urban Population out of Total Population
TotResRent	Total Resources Rents; the sum of "oil rents, natural gas rents, coal rents (hard and soft), mineral rents, and forest rents as percent of GDP
Polity	Polity score based on the Polity IV index

Model 1

$$\begin{aligned}
 CC_{it} = & \beta_0 + \beta \text{EduAttainment}_{it} + \text{PopGrowth}_{it} + \text{LogPopTotal}_{it} + \\
 & \text{LogGDPPERCapitaGrowth}_{it} + \text{HealthExp}_{it} + \text{UrbPop}_{it} + \text{TotResRent}_{it} + \text{Polity}_{it} + \\
 & \Sigma i \text{Country Fixed Effects}_i + \Sigma t \text{Year Fixed Effects}_t + \varepsilon_{it}
 \end{aligned}$$

Where t = time and i = country

Model 2

$$\begin{aligned} GE_{it} = & \beta_0 + \beta \text{EduAttainment}_{it} + \text{PopGrowth}_{it} + \text{LogPopTotal}_{it} + \\ & \text{LogGDPPerCapitaGrowth}_{it} + \text{HealthExp}_{it} + \text{UrbPop}_{it} + \text{TotResRent}_{it} + \text{Polity}_{it} + \\ & \Sigma i \text{Country Fixed Effects}_i + \Sigma t \text{Year Fixed Effects}_t + \varepsilon_{it} \end{aligned}$$

Where t = time and i = country

Model 3

$$\begin{aligned} RQ_{it} = & \beta_0 + \beta \text{EduAttainment}_{it} + \text{PopGrowth}_{it} + \text{LogPopTotal}_{it} + \\ & \text{LogGDPPerCapitaGrowth}_{it} + \text{HealthExp}_{it} + \text{UrbPop}_{it} + \text{TotResRent}_{it} + \text{Polity}_{it} + \\ & \Sigma i \text{Country Fixed Effects}_i + \Sigma t \text{Year Fixed Effects}_t + \varepsilon_{it} \end{aligned}$$

Where t = time and i = country

Model 4

$$\begin{aligned} RoL_{it} = & \beta_0 + \beta \text{EduAttainment}_{it} + \text{PopGrowth}_{it} + \text{LogPopTotal}_{it} + \\ & \text{LogGDPPerCapitaGrowth}_{it} + \text{HealthExp}_{it} + \text{UrbPop}_{it} + \text{TotResRent}_{it} + \text{Polity}_{it} + \\ & \Sigma i \text{Country Fixed Effects}_i + \Sigma t \text{Year Fixed Effects}_t + \varepsilon_{it} \end{aligned}$$

Where t = time and i = country

Model 5

$$\begin{aligned} VA_{it} = & \beta_0 + \beta \text{EduAttainment}_{it} + \text{PopGrowth}_{it} + \text{LogPopTotal}_{it} + \\ & \text{LogGDPPerCapitaGrowth}_{it} + \text{HealthExp}_{it} + \text{UrbPop}_{it} + \text{TotResRent}_{it} + \text{Polity}_{it} + \\ & \Sigma \text{Country Fixed Effects}_i + \Sigma \text{Year Fixed Effects}_t + \varepsilon_{it} \end{aligned}$$

Where t = time and i = country

Model 6

$$\begin{aligned} PV_{it} = & \beta_0 + \beta \text{EduAttainment}_{it} + \text{PopGrowth}_{it} + \text{LogPopTotal}_{it} + \\ & \text{LogGDPPerCapitaGrowth}_{it} + \text{HealthExp}_{it} + \text{UrbPop}_{it} + \text{TotResRent}_{it} + \text{Polity}_{it} + \\ & \Sigma \text{Country Fixed Effects}_i + \Sigma \text{Year Fixed Effects}_t + \varepsilon_{it} \end{aligned}$$

Where t = time and i = country

The dataset in the analysis include the years 1996, 1998, 2000, then 2002-2014, as these are the years for which the Worldwide Governance Indicators are available. Educational attainment indicators are available at 5-year intervals from 1995-2010. For this reason we have coded the 1995 year for educational attainment variables as 1996.

Chapter 6. Analysis

Tables 1 and 2 below display the results for the six fixed effect regression models that were run for each of the Worldwide Governance Indicators. In each model, each of the Worldwide Governance Indicators is regressed separately on the four indicators for Educational Attainment, as well as with all the controls; population growth percentage, log of total population, log of GDP per capita growth, public health expenditure (% of GDP), urban population (% of total), total natural resources rents (% of GDP), and each country's Polity score.

The four indicators for Educational Attainment; Average Years of Primary Schooling, Average Years of Secondary Schooling, and Average Years of Tertiary Schooling, are utilized in order to identify what level of education (primary, secondary, tertiary) if any, is driving the correlation.

Table 1.												
Independent Variables	Dependent Variables											
	Control of Corruption				Government Effectiveness				Political Stability & Absence of Violence/Terrorism			
Average years of total schooling, 15+	0.00109 (0.05)				0.0657*** (3.45)				-0.0530 (-1.49)			
Average years of primary schooling, 15+		0.159*** (2.67)				0.118** (2.46)				-0.0485 (-0.54)		
Average years of secondary schooling, 15+			-0.0378 (-1.11)				0.0736*** (2.71)				-0.0765 (-1.52)	
Average years of tertiary schooling, 15+				-0.151 (-1.23)				0.257*** (2.63)				-0.172 (-0.94)
Population Growth	0.0502** (1.99)	0.0533** (2.13)	0.0513** (2.04)	0.0515** (2.04)	0.0265 (1.33)	0.0299 (1.48)	0.0256 (1.27)	0.0255 (1.27)	0.0942** (2.52)	0.0924** (2.46)	0.0954** (2.55)	0.0947** (2.53)
Log of Total Population	-0.350* (-1.96)	-0.607*** (-3.15)	-0.319* (-1.87)	-0.332** (-1.97)	-0.350** (-2.48)	-0.379** (-2.43)	-0.242* (-1.79)	-0.212 (-1.58)	0.769*** (2.91)	0.716** (2.47)	0.695*** (2.76)	0.654*** (2.61)
Log of GDP per capita growth (annual %)	0.0407*** (2.60)	0.0425*** (2.74)	0.0413*** (2.64)	0.0415*** (2.65)	-0.00142 (-0.11)	0.000596 (0.05)	-0.00190 (-0.15)	-0.00215 (-0.17)	0.00613 (0.26)	0.00504 (0.22)	0.00679 (0.29)	0.00653 (0.28)
Health expenditure, public (% of GDP)	0.00832 (0.46)	0.00517 (0.29)	0.0121 (0.67)	0.0138 (0.76)	-0.00697 (-0.49)	0.000461 (0.03)	-0.00403 (-0.28)	-0.00614 (-0.42)	0.00211 (0.08)	-0.00487 (-0.18)	0.00136 (0.05)	0.000182 (0.01)
Urban population (% of total)	0.00187 (0.29)	-0.00235 (-0.37)	0.00358 (0.57)	0.00256 (0.41)	0.00105 (0.21)	0.00274 (0.54)	0.00275 (0.54)	0.00489 (0.99)	-0.0188** (-1.97)	-0.0214** (-2.25)	-0.0194** (-2.06)	-0.0220** (-2.39)
Total natural resources rents (% of GDP)	-0.00698*** (-2.67)	-0.00716*** (-2.78)	-0.00675*** (-2.59)	-0.00671** (-2.58)	-0.00557*** (-2.70)	-0.00514** (-2.48)	-0.00543*** (-2.61)	-0.00545*** (-2.62)	-0.00590 (-1.53)	-0.00630 (-1.63)	-0.00592 (-1.53)	-0.00606 (-1.56)
Polity	0.0169*** (2.59)	0.0147** (2.27)	0.0174*** (2.68)	0.0169*** (2.61)	0.00974* (1.89)	0.00985* (1.89)	0.0106** (2.04)	0.0115** (2.23)	0.0343*** (3.56)	0.0336*** (3.46)	0.0339*** (3.52)	0.0329*** (3.42)
Constants	5.537** (2.04)	9.264*** (3.20)	5.014* (1.94)	5.242** (2.05)	5.218** (2.43)	5.507** (2.36)	3.647* (1.77)	3.140 (1.54)	-11.28*** (-2.81)	-10.41** (-2.40)	-10.24*** (-2.67)	-9.548** (-2.51)
Observations	443	443	443	443	443	443	443	443	443	443	443	443
R-Squared	0.086	0.107	0.089	0.090	0.082	0.065	0.069	0.068	0.102	0.097	0.102	0.098
Note: Significance at 10% level is signified by *, 5% level is signified by **, and 1% level is signified by ***.												

Table 2.												
Independent Variables	Dependent Variables											
	Regulatory Quality				Rule of Law				Voice and Accountability			
Average years of total schooling, 15+	0.0397* (1.69)				0.0351* (1.81)				-0.0325* (-1.65)			
Average years of primary schooling, 15+		0.0161 (0.27)				0.0112 (0.23)				-0.0204 (-0.41)		
Average years of secondary schooling, 15+			0.0674** (2.03)				0.0498* (1.82)				-0.0412 (-1.48)	
Average years of tertiary schooling, 15+				0.0875 (0.73)				0.217** (2.20)				-0.226** (-2.27)
Population Growth	0.0500** (2.03)	0.0510** (2.06)	0.0488** (1.98)	0.0499** (2.02)	0.0202 (1.00)	0.0211 (1.03)	0.0195 (0.96)	0.0190 (0.94)	0.00366 (0.18)	0.00272 (0.13)	0.00426 (0.21)	0.00503 (0.25)
Log of Total Population	-0.210 (-1.20)	-0.137 (-0.71)	-0.162 (-0.98)	-0.119 (-0.72)	0.0868 (0.60)	0.156 (0.99)	0.137 (1.00)	0.153 (1.13)	-0.0128 (-0.09)	-0.0608 (-0.38)	-0.0626 (-0.45)	-0.0710 (-0.52)
Log of GDP per capita growth (annual %)	-0.0113 (-0.74)	-0.0107 (-0.70)	-0.0119 (-0.78)	-0.0114 (-0.74)	-0.00809 (-0.64)	-0.00761 (-0.60)	-0.00851 (-0.67)	-0.00891 (-0.71)	0.00718 (0.56)	0.00662 (0.52)	0.00750 (0.59)	0.00808 (0.64)
Health expenditure, public (% of GDP)	-0.0234 (-1.32)	-0.0178 (-1.02)	-0.0238 (-1.35)	-0.0205 (-1.14)	-0.00561 (-0.38)	-0.000553 (-0.04)	-0.00503 (-0.35)	-0.00796 (-0.54)	0.00956 (0.65)	0.00510 (0.35)	0.00857 (0.58)	0.0126 (0.85)
Urban population (% of total)	0.00351 (0.56)	0.00602 (0.96)	0.00354 (0.57)	0.00610 (1.01)	-0.00354 (-0.68)	-0.00124 (-0.24)	-0.00308 (-0.60)	-0.00181 (-0.36)	-0.00628 (-1.20)	-0.00814 (-1.56)	-0.00691 (-1.33)	-0.00778 (-1.55)
Total natural resources rents (% of GDP)	-0.00416 (-1.63)	-0.00384 (-1.50)	-0.00421* (-1.66)	-0.00397 (-1.55)	-0.00712*** (-3.39)	-0.00683*** (-3.24)	-0.00711*** (-3.38)	-0.00720*** (-3.43)	-0.00423** (-1.99)	-0.00448** (-2.10)	-0.00427** (-2.01)	-0.00411* (-1.94)
Polity	0.00395 (0.62)	0.00479 (0.75)	0.00415 (0.66)	0.00502 (0.79)	0.0235*** (4.49)	0.0243*** (4.59)	0.0238*** (4.55)	0.0244*** (4.70)	0.0601*** (11.33)	0.0595*** (11.13)	0.0597*** (11.29)	0.0592*** (11.26)
Constants	3.041 (1.15)	1.907 (0.66)	2.386 (0.95)	1.673 (0.67)	-1.470 (-0.67)	-2.544 (-1.08)	-2.176 (-1.04)	-2.447 (-1.19)	0.630 (0.29)	1.386 (0.58)	1.344 (0.64)	1.490 (0.72)
Observations	443	443	443	443	443	443	443	443	443	443	443	443
R-Squared	0.038	0.030	0.042	0.031	0.120	0.111	0.120	0.125	0.311	0.305	0.310	0.317
Note: Significance at 10% level is signified by *, 5% level is signified by **, and 1% level is signified by ***.												

Control of Corruption

The first regression is for the Control of Corruption indicator. The model indicates that the Average Years of Primary Schooling is significant at the 1 percent level, and shows that an increase of 1 year of schooling predicts an increase of 0.16 standard deviations in the Control of Corruption estimate. Meanwhile Average Years of Schooling, Average Years of Secondary Schooling, and Average years of tertiary schooling don't seem to predict Control of Corruption. This finding indicates that literacy might be the driving force in control of corruption.

Population growth is also significant at 5% regardless of the educational attainment variable used; indicating that 1% growth in population size predicts an increase of 0.05 standard deviations in the Control of Corruption estimate.

On the other hand the natural log of total population shows a significant negative correlation with control of corruption regardless of the educational attainment variable used, where 1 unit increase in the Log of total population predicts a decrease of an average of 0.4 standard deviations in the Control of Corruption estimate.

The natural log of GDP per capita growth is significant at 1% regardless of the educational attainment variable used, and indicates that an increase of 1 unit of Log of GDP per capita growth predicts an increase of 0.04 standard deviations in the Control of Corruption estimate.

Total natural resources rents shows a significant negative correlation, indicating that 1% increase total resources rents % of GDP predicts a decrease of an average of 0.006 standard deviations in

the Control of Corruption estimate. This is a significant correlation even if it is numerically small, as the independent variable here is measured as a percentage.

The Polity score is significant regardless of the educational attainment variable used, and indicates that a 1 point increase in the Polity score predicts an increase of an average of 0.02 standard deviations in the Control of Corruption estimate.

Urban population doesn't seem to predict Control of Corruption.

Government Effectiveness

The regressions in this model indicate that all years of educational attainment (primary, secondary, and tertiary) are significant for Government Effectiveness. However, tertiary education is the most important indicator for Government Effectiveness as it is significant at 1%; with one year of tertiary education predicting an increase of 0.257 standard deviations in the Government Effectiveness estimate.

Total Population is significant in regressions using Average Years of Schooling, Average Primary Years of Schooling and Average Secondary Years of Schooling, showing a negative influence, where 1 unit increase in the Log of total population predicts an average decrease of 0.3 standard deviations in the Government Effectiveness estimate.

Total natural resources rents also shows a significant negative correlation, indicating that 1% increase in total resources rents % of GDP predicts a decrease of an average of 0.005 standard deviations in the Government Effectiveness estimate.

The Polity score is also significant regardless of the educational attainment variable used, and indicates that a 1 point increase in the Polity score predicts an increase of an average of 0.01 standard deviations in the Government Effectiveness estimate.

Population growth, natural log of GDP per capita growth, and urban population are insignificant regardless of the educational attainment variable used.

Political Stability and Absence of Violence/Terrorism

The regressions in this model indicate that there is no significant relationship between Political Stability and Absence of Violence/Terrorism education.

Population growth is significant regardless of the educational attainment variable used, indicating that a 1% growth in population predicts an increase of 0.01 standard deviations in the Political Stability and Absence of Violence/Terrorism estimate. This is intuitive as a burgeoning population indicates a politically stable state.

The natural log of total population is also significant regardless of the educational attainment variable used, showing that 1 unit increase in the natural log of total population predicts an increase of an average of 0.7 standard deviations in this estimate.

Urban population shows a significant negative correlation regardless of the educational attainment variable used; indicating that 1% increase in urban population out of the total population predicts a decrease of 0.02 standard deviations in this estimate.

The Polity score is also significant regardless of the educational attainment variable used, and indicates that a 1 point increase in the Polity score predicts an increase of an average of 0.03 standard deviations in this estimate.

Total natural resources rents, and natural log of GDP per capita growth are insignificant regardless of the educational attainment variable used.

Regulatory Quality

The regressions of this model show a significant correlation between Average Years of Schooling and Regulatory Quality. They also show that educational attainment is significant at the secondary educational level only. The indicator for Average Secondary Years of Education is significant at 1%; with one year of secondary education predicting an increase of 0.07 standard deviations in the Regulatory Quality estimate.

Population growth is significant regardless of the educational attainment variable used, indicating that a 1% growth in population predicts an increase of an average of 0.05 standard deviations in the Political Stability and Absence of Violence/Terrorism estimate.

The Log of total population, the Log of GDP per Capita growth, Urban population, the Polity score are insignificant regardless of the educational attainment variable used, and Total natural

resources rents shows a minor significance of a negative correlation when using the Average Years of Secondary Schooling indicator.

Rule of Law

The regressions in this model show a significant correlation between Average Years of Schooling and Rule of Law. They also indicate that out of the three educational levels only the secondary and tertiary levels are significant. Tertiary education however is the most important indicator for Rule of Law as it is significant at 5%; with one year of tertiary education predicting an increase of 0.217 standard deviations in the Rule of Law estimate.

Total natural resources rents also shows a significant negative correlation, indicating that 1% increase in total resources rents % of GDP predicts a decrease of an average of 0.005 standard deviations in the Rule of Law estimate.

The Polity score is also significant regardless of the educational attainment variable used, and indicates that a 1 point increase in the Polity score predicts an increase of an average of 0.02 standard deviations in this estimate.

Population growth, the natural log of total population, the natural log of GDP per Capita growth, and urban population, are insignificant regardless of the educational attainment variable used.

Voice & Accountability

The regressions in this model show a significant negative correlation between Average Years of Schooling and Voice & Accountability. They also indicate that out of the three educational levels only the tertiary level is significant. Tertiary education is significant at 5%; with one year of tertiary education predicting a decrease of 0.226 standard deviations in Voice & Accountability estimate. This correlation seems counterintuitive as one would expect tertiary education to be a source of empowerment for citizens. However further analysis in the “Robustness” section of this thesis clarify that this correlation is being caused by authoritarian regimes in the dataset.

Total resources rents also shows a significant negative correlation regardless of the educational attainment variable used, indicating that 1% increase in total resources rents % of GDP predicts a decrease of an average of 0.004 standard deviations in the Voice & Accountability estimate.

The Polity score is also significant regardless of the educational attainment variable used, and indicates that a 1 point increase in the Polity score predicts an increase of an average of 0.06 standard deviations in this estimate.

Population growth, the natural log of total population, the natural log of GDP per Capita growth, and urban population, are insignificant regardless of the educational attainment variable used.

Chapter 7. Robustness Check

In order to evaluate the robustness of the results of the analysis and the reasoning behind the predictive relationships that were established, we have conducted a second layer analysis of three subsets based on the democratic or authoritarian nature of the countries. The reasoning behind this further analysis is to check whether established predictive relationships in the initial analysis continue to appear regardless of a country's democratic or authoritarian nature.

In order to create these subsets we divided the 147 countries in the subset according to the Freedom House criteria for the countries for which there was available data. The result was the categorization of a total of 141 countries from the dataset in the following categories; 63 Free, 46 Partly Free, and 32 Not free. The categorization is based on the Freedom House categorization (as of 2014) of "Free", "Partly Free", and "Not free" according to the average score of a country's political and civil rights, for an explanation of the methodology see Appendix 2. ("Methodology | Freedom House", 2016).

The result was the creation of six new tables (Tables 3 – 8) containing regressions in the first analysis applied to the three new subsets representing the three categories of Free, Partly Free, and Not free. Comparing them side by side highlighted which subset -if any- was responsible for the results in the first analysis.

Control of Corruption: Free, Partly Free, Not Free

Table 3.												
Independent Variables	Dependent Variables											
	Control of Corruption											
	Free				Partly Free				Not Free			
Average years of total schooling, 15+	0.00033 (0.01)				-0.0847 (-0.87)				-0.0159 (-0.15)			
Average years of primary schooling, 15+		0.233*** (2.68)				0.0054 (0.03)				0.254 (1.01)		
Average years of secondary schooling, 15+			-0.0414 (-1.01)				-0.194 (-1.18)				-0.105 (-0.61)	
Average years of tertiary schooling, 15+				-0.127 (-0.76)				-0.281 (-0.74)				-0.933 (-1.37)
Population Growth	0.0681 (1.44)	0.0855* (1.83)	0.0719 (1.52)	0.0741 (1.55)	0.0109 (0.17)	0.0253 (0.41)	0.00213 (0.03)	0.0125 (0.19)	0.103 (1.07)	0.0946 (1.03)	0.116 (1.21)	0.149 (1.52)
Log of Total Population	-1.549*** (-3.91)	-1.797*** (-4.58)	-1.506*** (-3.85)	-1.532*** (-3.93)	-0.257 (-0.57)	-0.465 (-0.98)	-0.312 (-0.76)	-0.407 (-1.02)	0.661 (1.00)	0.102 (0.13)	0.713 (1.18)	0.636 (1.11)
Log of GDP per capita growth (annual %)	0.0497** (2.15)	0.0527** (2.33)	0.0497** (2.16)	0.0500** (2.16)	0.120** (2.45)	0.114** (2.34)	0.121** (2.49)	0.118** (2.41)	0.0564 (0.95)	0.0627 (1.06)	0.06 (1.01)	0.0606 (1.03)
Health expenditure, public (% of GDP)	0.0269 (1.00)	0.0275 (1.07)	0.032 (1.20)	0.0321 (1.18)	-0.0173 (-0.29)	-0.0326 (-0.53)	-0.0222 (-0.38)	-0.0272 (-0.47)	0.0234 (0.35)	0.0212 (0.33)	0.031 (0.46)	0.0622 (0.88)
Urban population (% of total)	0.0137 (1.27)	0.00723 (0.68)	0.015 (1.41)	0.0142 (1.34)	0.0223 (1.14)	0.0136 (0.73)	0.0247 (1.28)	0.0145 (0.86)	-0.0267 (-1.20)	-0.0315 (-1.46)	-0.0238 (-1.07)	-0.0215 (-1.00)
Total natural resources rents (% of GDP)	-0.0162*** (-3.06)	-0.0163*** (-3.17)	-0.0156*** (-2.96)	-0.0158*** (-2.98)	-0.0161* (-1.95)	-0.0165* (-1.99)	-0.0167** (-2.03)	-0.0156* (-1.88)	-0.000907 (-0.14)	-0.0014 (-0.21)	-0.000668 (-0.10)	-0.00192 (-0.30)
Polity	0.0438*** (2.78)	0.0384** (2.50)	0.0459*** (2.92)	0.0443*** (2.84)	0.0228* (1.67)	0.0217 (1.57)	0.0222 (1.64)	0.0213 (1.56)	0.0111 (0.43)	0.00573 (0.22)	0.0109 (0.42)	0.0088 (0.35)
Constants	23.58*** (3.91)	26.77*** (4.51)	22.91*** (3.83)	23.30*** (3.91)	3.826 (0.54)	7.158 (0.98)	4.514 (0.70)	6.25 (1.01)	-9.676 (-0.96)	-1.28 (-0.11)	-10.6 (-1.15)	-9.567 (-1.10)
Observations	211	211	211	211	140	140	140	140	92	92	92	92
R-Squared	0.23	0.267	0.235	0.233	0.133	0.126	0.139	0.131	0.076	0.093	0.082	0.107
Note: Significance at 10% level is signified by *, 5% level is signified by **, and 1% level is signified by ***.												

In this model the “Free” subset shows the same correlation identified in the first analysis between the Average Years of Primary Schooling and Control of Corruption estimate. It is significant at the 1 percent level, and indicates that an increase of 1 year of primary schooling predicts an increase of 0.233 standard deviations in the Control of Corruption estimate.

Meanwhile Average Years of Schooling, Average Years of Secondary Schooling, and Average Years of Tertiary schooling still don’t predict Control of Corruption in this subset. This finding reiterates that literacy might be the driving force in control of corruption but only for countries in the “Free” subsets.

However there is no correlation between the Average Years of Primary Schooling and Control of Corruption for “Partly Free” and “Not Free” subsets. There is also no correlation between education and Control of Corruption in the “Partly Free” and “Not Free” subsets.

Government Effectiveness: Free, Partly Free, Not Free

Table 4.												
Independent Variables	Dependent Variables											
	Government Effectiveness											
	Free				Partly Free				Not Free			
Average years of total schooling, 15+	0.0830*** (3.14)				0.0441 (0.67)				0.0795 (0.87)			
Average years of primary schooling, 15+		0.243*** (3.17)				-0.0517 (-0.42)				0.155 (0.71)		
Average years of secondary schooling, 15+			0.0755** (2.10)				0.142 (1.28)				0.101 (0.68)	
Average years of tertiary schooling, 15+				0.337** (2.30)				0.143 (0.56)				0.593 (0.99)
Population Growth	-0.0487 (-1.19)	-0.0252 (-0.61)	-0.0503 (-1.21)	-0.0593 (-1.42)	0.0116 (0.27)	0.00403 (0.10)	0.0211 (0.49)	0.0107 (0.25)	0.228*** (2.75)	0.245*** (3.04)	0.231*** (2.74)	0.216** (2.51)
Log of Total Population	-1.080*** (-3.17)	-1.156*** (-3.35)	-0.974*** (-2.83)	-0.941*** (-2.76)	-0.223 (-0.73)	-0.0447 (-0.14)	-0.225 (-0.82)	-0.144 (-0.54)	-0.584 (-1.02)	-0.659 (-0.98)	-0.443 (-0.84)	-0.361 (-0.72)
Log of GDP per capita growth (annual %)	0.00739 (0.37)	0.0099 (0.50)	0.00662 (0.33)	0.00592 (0.29)	0.0267 (0.81)	0.0304 (0.93)	0.0244 (0.75)	0.0279 (0.85)	-0.0256 (-0.50)	-0.0202 (-0.39)	-0.028 (-0.54)	-0.0271 (-0.53)
Health expenditure, public (% of GDP)	0.00868 (0.38)	0.0226 (1.00)	0.0128 (0.55)	0.00833 (0.35)	-0.0484 (-1.19)	-0.0353 (-0.86)	-0.0479 (-1.23)	-0.0432 (-1.10)	0.0616 (1.06)	0.0724 (1.28)	0.0631 (1.08)	0.0464 (0.75)
Urban population (% of total)	-0.00659 (-0.71)	-0.00816 (-0.87)	-0.00372 (-0.40)	-0.00285 (-0.31)	0.0109 (0.83)	0.0174 (1.40)	0.00735 (0.57)	0.0149 (1.31)	0.0219 (1.14)	0.0242 (1.28)	0.0228 (1.18)	0.0226 (1.20)
Total natural resources rents (% of GDP)	-0.00302 (-0.66)	-0.00159 (-0.35)	-0.00259 (-0.56)	-0.00275 (-0.59)	-0.00988* (-1.78)	-0.00953* (-1.71)	-0.00953* (-1.73)	-0.0101* (-1.80)	-0.0105* (-1.85)	-0.0105* (-1.84)	-0.0105* (-1.84)	-0.00964* (-1.69)
Polity	0.0241* (1.78)	0.0247* (1.82)	0.0268* (1.94)	0.0291** (2.13)	0.0195** (2.13)	0.0207** (2.23)	0.0198** (2.18)	0.0203** (2.22)	-0.00111 (-0.05)	-0.00281 (-0.12)	0.000308 (0.01)	0.00163 (0.07)
Constants	16.90*** (3.25)	17.60*** (3.37)	15.48*** (2.95)	14.98*** (2.87)	3.087 (0.65)	0.278 (0.06)	3.261 (0.76)	1.814 (0.44)	7.706 (0.88)	8.67 (0.86)	5.6 (0.70)	4.396 (0.58)
Observations	211	211	211	211	140	140	140	140	92	92	92	92
R-Squared	0.144	0.146	0.113	0.118	0.118	0.115	0.129	0.116	0.21	0.207	0.206	0.214
Note: Significance at 10% level is signified by *, 5% level is signified by **, and 1% level is signified by ***.												

In this model the “Free” subsets reflect the same findings in the first analysis where educational attainment is significant at all of its levels (primary, secondary, and tertiary). Again tertiary education is the most important indicator for Government Effectiveness with a 5% significance level; and with one year of tertiary education predicting an increase of 0.337 standard deviations in the Government Effectiveness estimate.

However there was no significant correlation between any of the education indicators and Government Effectiveness in the “Partly Free” and “Not Free” subsets.

Political Stability & Absence of Violence/Terrorism: Free, Partly Free, Not Free

Table 5.												
Independent Variables	Dependent Variables											
	Political Stability & Absence of Violence/Terrorism											
	Free				Partly Free				Not Free			
Average years of total schooling, 15+	-0.068 (-1.45)				0.0771 (0.62)				-0.0928 (-0.82)			
Average years of primary schooling, 15+		0.12 (0.88)				-0.29 (-1.24)				-0.0344 (-0.13)		
Average years of secondary schooling, 15+			-0.121* (-1.94)				0.377* (1.81)				-0.227 (-1.24)	
Average years of tertiary schooling, 15+				-0.427* (-1.67)				0.443 (0.91)				0.0418 (0.06)
Population Growth	0.0156 (0.21)	0.0201 (0.27)	0.0222 (0.31)	0.0314 (0.43)	0.214** (2.62)	0.201** (2.56)	0.246*** (3.02)	0.222*** (2.71)	0.0657 (0.64)	0.0443 (0.44)	0.0812 (0.79)	0.0415 (0.39)
Log of Total Population	-0.484 (-0.80)	-0.761 (-1.23)	-0.511 (-0.86)	-0.578 (-0.97)	1.018* (1.75)	1.613*** (2.69)	0.916* (1.77)	1.121** (2.21)	1.136 (1.60)	0.928 (1.11)	1.074 (1.67)	0.858 (1.37)
Log of GDP per capita growth (annual %)	0.0638* (1.80)	0.0659* (1.85)	0.0645* (1.84)	0.0654* (1.85)	-0.142** (-2.26)	-0.132** (-2.13)	-0.150** (-2.43)	-0.142** (-2.27)	0.0927 (1.45)	0.0902 (1.40)	0.0996 (1.56)	0.0909 (1.41)
Health expenditure, public (% of GDP)	-0.0405 (-0.99)	-0.0512 (-1.27)	-0.0367 (-0.90)	-0.0341 (-0.82)	-0.0166 (-0.21)	0.0273 (0.35)	-0.0223 (-0.30)	-0.0108 (-0.15)	0.0838 (1.17)	0.0711 (1.01)	0.0921 (1.29)	0.0693 (0.89)
Urban population (% of total)	0.00669 (0.41)	-0.000899 (-0.05)	0.00614 (0.38)	0.00427 (0.26)	-0.0648** (-2.60)	-0.0452* (-1.92)	-0.0782*** (-3.22)	-0.0582*** (-2.70)	-0.0249 (-1.05)	-0.0299 (-1.28)	-0.0221 (-0.93)	-0.0307 (-1.30)
Total natural resources rents (% of GDP)	-0.00598 (-0.74)	-0.00724 (-0.89)	-0.00549 (-0.68)	-0.00565 (-0.70)	-0.00797 (-0.75)	-0.00676 (-0.64)	-0.00722 (-0.69)	-0.00891 (-0.84)	-0.00463 (-0.65)	-0.00491 (-0.69)	-0.00432 (-0.62)	-0.00492 (-0.69)
Polity	0.0692*** (2.87)	0.0612** (2.53)	0.0699*** (2.92)	0.0657*** (2.75)	0.0519*** (2.97)	0.0563*** (3.21)	0.0521*** (3.04)	0.0536*** (3.09)	-0.0087 (-0.31)	-0.00968 (-0.34)	-0.0103 (-0.38)	-0.0103 (-0.37)
Constants	7.557 (0.82)	11.36 (1.22)	7.773 (0.85)	8.81 (0.97)	-14.58 (-1.60)	-23.87** (-2.58)	-12.6 (-1.56)	-16.26** (-2.07)	-17.14 (-1.58)	-13.85 (-1.10)	-16.4 (-1.67)	-12.78 (-1.34)
Observations	211	211	211	211	140	140	140	140	92	92	92	92
R-Squared	0.114	0.106	0.124	0.118	0.281	0.29	0.303	0.284	0.096	0.085	0.11	0.084
Note: Significance at 10% level is signified by *, 5% level is signified by **, and 1% level is signified by ***.												

New correlations appear in this analysis where Average Secondary Years of Schooling and Average Tertiary Years of Schooling have a negative effect on the Political Stability & Absence of Violence/Terrorism estimate in the “Free” subset. Each 1 year increase of secondary schooling predicts a decrease of 0.122 standard deviations in this estimate, and each 1 year increase in tertiary education predicts a decrease of 0.427 standard deviations in this estimate both with a 10% significance level.

Meanwhile Average Years of Secondary Schooling have a positive correlation on the Political Stability & Absence of Violence/Terrorism estimate in the “Partly Free” subset, where each 1 year increase in secondary school education predicts an increase of 0.377 standard deviations of this estimate at a 10% significance level. However there were no correlations between education and the “Not Free” subset were found.

Regulatory Quality: Free, Partly Free, Not Free

Table 6.												
Independent Variables	Dependent Variables											
	Regulatory Quality											
	Free				Partly Free				Not Free			
Average years of total schooling, 15+	0.0890** (2.38)				0.0661 (0.69)				-0.0864 (-1.04)			
Average years of primary schooling, 15+		0.0378 (0.34)				0.096 (0.53)				-0.0507 (-0.25)		
Average years of secondary schooling, 15+			0.126** (2.53)				0.147 (0.91)				-0.164 (-1.22)	
Average years of tertiary schooling, 15+				0.396* (1.92)				-0.161 (-0.43)				-0.641 (-1.18)
Population Growth	0.0772 (1.34)	0.0858 (1.45)	0.0715 (1.24)	0.0642 (1.09)	0.0764 (1.23)	0.0654 (1.09)	0.0827 (1.31)	0.0578 (0.92)	0.0613 (0.81)	0.0417 (0.57)	0.068 (0.89)	0.0749 (0.96)
Log of Total Population	-0.701 (-1.45)	-0.545 (-1.10)	-0.633 (-1.33)	-0.556 (-1.16)	-0.377 (-0.85)	-0.358 (-0.78)	-0.332 (-0.83)	-0.192 (-0.49)	0.517 (0.99)	0.361 (0.59)	0.414 (0.88)	0.274 (0.60)
Log of GDP per capita growth (annual %)	-0.0145 (-0.52)	-0.0147 (-0.51)	-0.0154 (-0.55)	-0.0162 (-0.57)	0.00327 (0.07)	0.00595 (0.13)	0.00228 (0.05)	0.00946 (0.20)	-0.0142 (-0.30)	-0.017 (-0.36)	-0.00953 (-0.20)	-0.0126 (-0.27)
Health expenditure, public (% of GDP)	0.00802 (0.25)	0.0225 (0.69)	0.00695 (0.21)	0.00627 (0.19)	-0.0602 (-1.02)	-0.0589 (-0.99)	-0.0562 (-0.99)	-0.046 (-0.81)	-0.0659 (-1.25)	-0.0777 (-1.50)	-0.0625 (-1.18)	-0.0496 (-0.88)
Urban population (% of total)	-0.00324 (-0.25)	0.00127 (0.09)	-0.00153 (-0.12)	0.000631 (0.05)	-0.0024 (-0.13)	0.000238 (0.01)	-0.00406 (-0.22)	0.00461 (0.28)	0.0186 (1.06)	0.0143 (0.83)	0.0196 (1.12)	0.0178 (1.04)
Total natural resources rents (% of GDP)	-0.007 (-1.09)	-0.0054 (-0.83)	-0.00718 (-1.11)	-0.00684 (-1.05)	-0.00994 (-1.23)	-0.00991 (-1.23)	-0.00948 (-1.18)	-0.00915 (-1.13)	-0.00222 (-0.43)	-0.00244 (-0.47)	-0.00206 (-0.40)	-0.00319 (-0.61)
Polity	0.00956 (0.50)	0.0154 (0.79)	0.0102 (0.53)	0.0148 (0.77)	0.015 (1.12)	0.0146 (1.09)	0.0155 (1.17)	0.0155 (1.16)	-0.0217 (-1.07)	-0.0223 (-1.07)	-0.0232 (-1.15)	-0.0247 (-1.22)
Constants	10.59 (1.44)	8.286 (1.10)	9.794 (1.35)	8.608 (1.18)	6.091 (0.88)	5.694 (0.80)	5.502 (0.88)	3.132 (0.52)	-8.785 (-1.10)	-6.285 (-0.68)	-7.359 (-1.02)	-5.19 (-0.75)
Observations	211	211	211	211	140	140	140	140	92	92	92	92
R-Squared	0.086	0.051	0.09	0.074	0.068	0.066	0.072	0.065	0.112	0.095	0.118	0.117
Note: Significance at 10% level is signified by *, 5% level is signified by **, and 1% level is signified by ***.												

In the “Free” subset there is a significant correlation between Average Years of Schooling and Regulatory Quality reiterating the initial analysis. The same relationship between Average Years of Secondary Schooling exists albeit with a higher coefficient. However, a new correlation arises between Average Tertiary Years of Schooling and the Regulatory Quality estimate. Each 1 year increase in tertiary school education predicts an increase of 0.396 standard deviations of this estimate with a 10% significance level.

There was no correlation between the education indicators and the “Partly Free” and “Free” subsets.

Rule of Law: Free, Partly Free, Not Free

Table 7.

Independent Variables	Dependent Variables											
	Rule of Law											
	Free				Partly Free				Not Free			
Average years of total schooling, 15+	0.0425* (1.94)				0.108 (1.14)				0.0316 (0.38)			
Average years of primary schooling, 15+		-0.0174 (-0.27)				0.00282 (0.02)				0.137 (0.70)		
Average years of secondary schooling, 15+			0.0606** (2.08)				0.274* (1.71)				-0.0298 (-0.22)	
Average years of tertiary schooling, 15+				0.308** (2.60)				0.212 (0.57)				0.768 (1.45)
Population Growth	-0.00319 (-0.09)	-0.00176 (-0.05)	-0.00598 (-0.18)	-0.015 (-0.44)	0.0296 (0.48)	0.0112 (0.19)	0.0439 (0.70)	0.0208 (0.33)	0.101 (1.34)	0.106 (1.47)	0.113 (1.50)	0.0672 (0.88)
Log of Total Population	-0.798*** (-2.82)	-0.686** (-2.36)	-0.766*** (-2.74)	-0.744*** (-2.70)	0.287 (0.65)	0.539 (1.17)	0.337 (0.85)	0.505 (1.30)	0.438 (0.85)	0.256 (0.43)	0.561 (1.19)	0.514 (1.15)
Log of GDP per capita growth (annual %)	0.0175 (1.06)	0.0169 (1.01)	0.0171 (1.04)	0.0164 (1.00)	-0.039 (-0.82)	-0.032 (-0.67)	-0.0418 (-0.89)	-0.0344 (-0.72)	-0.0367 (-0.79)	-0.0326 (-0.70)	-0.0351 (-0.75)	-0.0399 (-0.87)
Health expenditure, public (% of GDP)	0.0143 (0.75)	0.0211 (1.11)	0.0137 (0.72)	0.00857 (0.45)	-0.0271 (-0.46)	-0.00865 (-0.14)	-0.0222 (-0.39)	-0.012 (-0.21)	-0.018 (-0.35)	-0.0137 (-0.27)	-0.011 (-0.21)	-0.0474 (-0.86)
Urban population (% of total)	0.00232 (0.30)	0.00546 (0.69)	0.00312 (0.41)	0.00366 (0.49)	-0.0363* (-1.91)	-0.0256 (-1.41)	-0.0408** (-2.20)	-0.026 (-1.57)	0.0139 (0.80)	0.0136 (0.81)	0.0168 (0.97)	0.0107 (0.64)
Total natural resources rents (% of GDP)	-0.0109*** (-2.88)	-0.0101*** (-2.66)	-0.0110*** (-2.91)	-0.0113*** (-3.00)	-0.0131 (-1.63)	-0.0126 (-1.56)	-0.0123 (-1.55)	-0.0132 (-1.62)	-0.00762 (-1.48)	-0.00774 (-1.51)	-0.00742 (-1.44)	-0.00672 (-1.33)
Polity	0.0358*** (3.18)	0.0394*** (3.46)	0.0361*** (3.22)	0.0378*** (3.43)	0.0417*** (3.14)	0.0429*** (3.18)	0.0424*** (3.24)	0.0434*** (3.26)	0.0279 (1.39)	0.0257 (1.26)	0.0284 (1.42)	0.0301 (1.53)
Constants	11.98*** (2.78)	10.39** (2.37)	11.61*** (2.72)	11.29*** (2.68)	-3.582 (-0.52)	-7.624 (-1.07)	-4.122 (-0.66)	-7.091 (-1.18)	-7.925 (-1.00)	-5.261 (-0.58)	-9.871 (-1.37)	-8.879 (-1.31)
Observations	211	211	211	211	140	140	140	140	92	92	92	92
R-Squared	0.186	0.165	0.189	0.202	0.177	0.165	0.192	0.168	0.19	0.195	0.188	0.218

Note: Significance at 10% level is signified by *, 5% level is signified by **, and 1% level is signified by ***.

Appendix 8: Table 8. The “Free” subset reflects the findings of the initial analysis in the correlation between Average Years of Schooling and Rule of Law. They also reiterate the same findings that out of the three educational levels only the secondary and tertiary levels are significant, and with higher coefficients. Where each 1 year increase in secondary school education predicts an increase of 0.06 standard deviations of this estimate at a 5% significance level, and each 1 year increase in tertiary school education predicts an increase of 0.308 standard deviations of this estimate with a 5% significance level.

The “Partly Free” subset also reiterates the significant relationship between Average Years of Secondary Schooling with Rule of Law. Each increased year of secondary schooling predicts an increase of 0.274 standard deviations in the Rule of Law estimate with a 10% significance level. The “Not Free” subset shows no correlation between the education indicators and the Rule of Law estimate.

Voice & Accountability: Free, Partly Free, Not Free

Table 8.												
Independent Variables	Dependent Variables											
	Voice and Accountability											
	Free				Partly Free				Not Free			
Average years of total schooling, 15+	0.00962 (0.30)				-0.165 (-1.25)				0.374*** (-2.79)			
Average years of primary schooling, 15+		0.143 (1.55)				-0.0873 (-0.35)				-0.351 (-1.04)		
Average years of secondary schooling, 15+			-0.00506 (-0.12)				-0.232 (-1.04)				-0.703*** (-3.32)	
Average years of tertiary schooling, 15+				-0.139 (-0.80)				-0.907* (-1.78)				-1.967** (-2.20)
Population Growth	-0.0609 (-1.24)	-0.0496 (-1.01)	-0.0598 (-1.21)	-0.0537 (-1.08)	-0.00303 (-0.04)	0.0247 (0.29)	-0.0027 (-0.03)	-0.0163 (-0.19)	0.0777 (0.64)	-0.00464 (-0.04)	0.105 (0.88)	0.0937 (0.73)
Log of Total Population	-0.0515 (-0.12)	-0.182 (-0.44)	-0.0252 (-0.06)	-0.0125 (-0.03)	0.836 (1.36)	0.569 (0.89)	0.619 (1.11)	0.607 (1.14)	0.349 (0.42)	-0.0596 (-0.06)	-0.101 (-0.14)	-0.721 (-0.96)
Log of GDP per capita growth (annual %)	0.0243 (1.01)	0.0261 (1.09)	0.0242 (1.01)	0.0245 (1.02)	-0.0249 (-0.38)	-0.0342 (-0.52)	-0.0273 (-0.41)	-0.0251 (-0.38)	0.039 (0.52)	0.0236 (0.29)	0.059 (0.80)	0.0423 (0.55)
Health expenditure, public (% of GDP)	0.0134 (0.48)	0.0153 (0.56)	0.0156 (0.56)	0.0206 (0.73)	-0.0594 (-0.73)	-0.0789 (-0.95)	-0.0763 (-0.96)	-0.0724 (-0.93)	0.0715 (0.84)	0.0205 (0.23)	0.0856 (1.03)	0.107 (1.14)
Urban population (% of total)	0.000221 (0.02)	-0.00314 (-0.28)	0.000978 (0.09)	0.00142 (0.13)	-0.00253 (-0.10)	-0.0154 (-0.61)	-0.00602 (-0.23)	-0.0167 (-0.74)	-0.0335 (-1.19)	-0.0501* (-1.73)	-0.0298 (-1.09)	-0.0425 (-1.50)
Total natural resources rents (% of GDP)	-0.00647 (-1.17)	-0.00634 (-1.16)	-0.00622 (-1.13)	-0.00579 (-1.05)	-0.0240** (-2.15)	-0.0245** (-2.18)	-0.0250** (-2.24)	-0.0221* (-1.99)	0.000248 (0.03)	0.000509 (-0.06)	0.000886 (0.11)	-0.00312 (-0.36)
Polity	0.113*** (6.86)	0.110*** (6.77)	0.114*** (6.94)	0.114*** (7.02)	0.155*** (8.42)	0.154*** (8.23)	0.154*** (8.34)	0.152*** (8.32)	0.0586* (1.80)	0.0589* (1.68)	0.052 (1.64)	0.0475 (1.42)
Constants	-0.311 (-0.05)	1.341 (0.21)	-0.698 (-0.11)	-0.912 (-0.15)	-12.66 (-1.32)	-8.312 (-0.84)	-9.416 (-1.08)	-8.946 (-1.09)	-1.645 (-0.13)	5.214 (0.33)	4.669 (0.41)	14.47 (1.26)
Observations	211	211	211	211	140	140	140	140	92	92	92	92
R-Squared	0.282	0.293	0.281	0.284	0.487	0.478	0.484	0.496	0.353	0.275	0.386	0.321
Note: Significance at 10% level is signified by *, 5% level is signified by **, and 1% level is signified by ***.												

The “Not Free” subsets reiterate the negative correlation between education indicators and the Voice & Accountability estimate. Both Average Years of Secondary and Tertiary Schooling show significant negative correlation. Each 1 year increase of secondary school education predicts a decrease of 0.703 standard deviations in the Voice and Accountability estimate, at 1% significance. While each 1 year increase in tertiary school education predicts a decrease of 1.967 standard deviations with a 5% significance level.

The same relationship between education and the Voice & Accountability estimate is reflected in the “Partly Free” subset. Each 1 year increase in tertiary education predicts a decrease in the Voice & Accountability estimate by 0.907 standard deviations, at a 10% significance level. In the “Free” subset there was no correlation between the education indicators and the Voice & Accountability estimate.

Chapter 8. Discussion

Rejecting the Null Hypothesis

Based on the results in the first part of the analysis in which the whole dataset of 147 countries was analyzed, years of educational attainment in at least one of the educational levels was found to significantly predict Control of Corruption, Government effectiveness, Regulatory Quality and Rule of Law (Table 9.). Since these four indicators exclusively define governance as per our definition, we can therefore reject the null hypothesis.

Table 9.										
Independent Variables	Dependent Variables									
	Control of Corruption	Government Effectiveness				Regulatory Quality		Rule of Law		
Average years of total schooling, 15+		0.0657*** (3.45)				0.0397* (1.69)		0.0351* (1.81)		
Average years of primary schooling, 15+	0.159*** (2.67)		0.118** (2.46)							
Average years of secondary schooling, 15+				0.0736*** (2.71)			0.0674** (2.03)		0.0498* (1.82)	
Average years of tertiary schooling, 15+					0.257*** (2.63)					0.217** (2.20)

However if we take the second layer of analysis into account in which the dataset was divided into three categories based on whether they were “Free”, “Partly Free”, or “Not Free” we find that the significant predictive relationships between years of educational attainment and the Worldwide Governance indicators exclusive to governance can be found only in the “Free” countries subset (Table 10.). However the “Partly Free” and “Not Free” subsets showed absolutely no significant relationships between years of educational attainment, and quality of

governance; with the only exception being Average Years of Secondary Schooling having a significant relationship with rule of law in the “Partly Free” subset.

Table 10.											
Independent Variables						Dependent Variables					
	Control of Corruption	Government Effectiveness				Regulatory Quality			Rule of Law		
Average years of total schooling, 15+		0.0830*** (3.14)				0.0890** (2.38)			0.0425* (1.94)		
Average years of primary schooling, 15+	0.233*** (2.68)		0.243*** (3.17)								
Average years of secondary schooling, 15+				0.0755** (2.1)			0.126** (2.53)			0.0606** (2.08)	
Average years of tertiary schooling, 15+					0.337** (2.3)			0.396* (1.92)			0.308** (2.60)

Based on the second layer of analysis of the three subsets; “Free”, “Partly Free”, and “Not Free” we would have to conclude that the null hypothesis can only be rejected for the “Free” countries subsets. This means that there is no significant correlation between years of educational attainment and quality of governance in both “Partly Free” and “Not Free” states. An explanation of this finding could be that there are barriers to educational attainment affecting the performance of employees in public institutions, such as nepotism, cronyism, and corruption. While in “Free” states there are no barriers to educational attainment enhancing public employee performance.

These findings corroborate the revised version of modernization theory championed by Inglehart et al. (2010) which states that certain “cultural variables (deeply-instilled attitudes among the public of a society) play an important role in democratization” as opposed to specific variables that uniformly affect democracy across countries and cultures. Our findings therefore conclude

that the revised version of modernization theory applies to quality of governance as it does to democracy.

Negative Correlation Between Education, and V&A

Another important finding of the initial analysis of the full dataset was the significant negative correlation between Voice & Accountability and Average Years of Schooling, as well as Average Years of Tertiary Schooling. This seems counterintuitive as we would expect an increase in years of educational attainment to influence a positive increase in the Voice & Accountability estimate. However the second layer of analysis shows that this negative correlation exists only in the “Not Free” and “Partly Free” subsets, while no correlation between years of educational attainment and Voice & Accountability exists in the “Free” subset. Further analysis clarifies this relationship.

In the “Not Free” states increases in both secondary and tertiary years of education are significantly correlated with decrease in the Voice & Accountability estimate, while in the “Partly Free” the negative correlation is with the increase in secondary years of education. This indicates that as educational levels increase, awareness increases and consequently citizens become more verbal in their sentiments towards the government and in their requests for more freedoms. In the cases of “Not Free” and “Partly Free” states this would be usually met with government crackdown. Therefore as years of education increase and expectations of freedom increase and are voiced, government measures to put restrictions on Voice & Accountability increase.

Negative Correlation Between Education & Political Stability (Free States)

One of the most surprising findings is that in the second layer of analysis the “Free” subset shows a negative correlation between secondary and tertiary years of schooling and the Political Stability & Absence of Violence/Terrorism estimate. In explaining this finding it is important to note that the categorization of the full dataset into the subsets of “Free”, “Partly Free”, and “Not Free” was based on the ratings of the country in the year 2014. Therefore the instances of political instability indicated in this finding, could be explained by countries undergoing tumultuous democratic transition in earlier years. If that is the case then this correlation can be explained on the basis that secondary and tertiary years of schooling lead to political instability in the form of demands and action for democratic transition, which ultimately lead to the change in the rating of the country to “Free” by the year 2014. However such conclusions need more analysis beyond the scope of this thesis.

Control Variables and Worldwide Governance Indicators

Population growth has a significant positive influence on Control of Corruption, Political Stability and Absence of Violence/Terrorism, and Regulatory Quality, while it had no influence on Rule of Law and Voice & Accountability. As predicted the findings reiterate the views of Simon et al. (2000) as well as Anligicia (2016) who perceive a positive relationship between population growth and mastery over nature and its resources, as opposed to the Neo-Malthusianism view that sees population growth causing political instability and violence due to the scarcity of resources. If the Neo-Malthusianism view had been correct we would have seen a

negative influence of population growth on Political Stability and Absence of Violence/Terrorism, however that is was not the case.

Total population had a significant negative influence on Control of Corruption, and Government effectiveness. It also had a significant positive influence on the Political Stability and Absence of Violence/Terrorism estimate, and no influence on Regulatory Quality, Rule of Law and Voice & Accountability. The negative influence of population size and Control of Corruption and Government effectiveness are in agreement with Blais et al. (1998) and Dahl et al. (1973) who state that a larger state would negatively affect democracy due to increased communications cost between elites and the masses, as well as relatively reduced stress on resources. Our findings thus show that this relationship can be expanded to include part of the governance indicators, where smaller populations enjoy better Control of Corruption, and Government Effectiveness.

In the analysis the indicators of GDP per capita growth and urban population are used to signify modernization. GDP per capita growth had a significant positive influence on Control of Corruption, with no significant correlation with any other indicator. Urban population has a significant negative correlation with the Political Stability and Absence of Violence/Terrorism estimate, while having no significant correlation with any other indicator. Modernization theory suggests that economic development and modernization will be correlated with an increase in democracy. However based on the findings we cannot expand this theory to include governance. Our findings again seem more in line with the revised version of modernization theory mentioned earlier (Inglehart et al, 2000). The negative correlation between urban population and Political Stability and Absence of Violence/Terrorism, could be caused by the expansion of inner

city low-income housing, or unofficial housing within the urban population. Meaning that, the socio-economic challenges that accompany the increase in the urban *poor* population is driving the decrease in Political Stability and Absence of Violence/Terrorism. However more analysis needs to be made in this regard.

Total natural resources rents percent of GDP has significant negative correlations with Control of Corruption, Government Effectiveness, Rule of Law, and Voice & Accountability. However there is no significant correlation with the Political Stability and Absence of Violence/Terrorism indicator, and a minor negative correlation with Regulatory Quality. Our findings support the claim of the resource curse explained in the literature review, where resources impede democracy; it is safe to say that this relationship can be expanded to include governance. Our findings also support the perspectives of Tsui (2008) and Mulligan et al. (2008) who explain this resource-curse as being rooted in authoritarian regimes entrenching their power and preventing entry of others via patronage systems, nepotism, and cronyism; therefore impeding democratic/governance development. The lack of significant correlation between rents and Political Stability and Absence of Violence/Terrorism in the analysis does not support the views of Aslaksen et al. (2006) who perceived the resource curse as a result of higher susceptibility of rent states to political violence, which in turn impedes democratic/governance development.

The Polity indicator shows significant positive influence on Control of Corruption, Government Effectiveness, and Rule of Law, while showing no significant influence on Regulatory Quality (results for Political Stability & Absence of Violence/Terrorism and Voice & Accountability have been removed due to potential for endogeneity). As was highlighted earlier the Polity

indicator depends on the minimalist definition of democracy that focuses on the institutions and methods of selection of government (chief executive office and legislative body), as well as “contestation” (Przeworski et al. 2000: 16–17). Based on this definition we can therefore measure the influence of minimalist democracy on quality of governance as defined by this thesis without the fear that their definitions contain any endogeneity. Therefore the findings indicate that we can safely say that minimal democracy is significantly positively correlated with the majority of indicators for governance.

Overall there is a multitude of findings from the data; however the main finding is the reinforcement of the revised version of modernization theory championed by Inglehart et al. (2010) in its application to the development of quality of governance. Meaning that instead of looking for specific variables that uniformly affect development of good governance across countries and cultures, we should rather consider the effect of the cultural variables; deeply-instilled attitudes among the public of a society. This should lead us to infer trends or predictors from groupings of similar countries and cultures, instead of larger subsets that would behave as a melting pot for these cultural variables. These findings also indicate that international development organizations and donor governments should be cautious when making aid decisions depending on sweeping generalizations of predictors of quality of governance, and should rather invest more time in understanding the predictors of governance quality specific to the recipient country. This conclusion is reinforced by the differences found in the second layer of analysis where the relationship between years of educational attainment and quality of governance completely disappeared in the “Partly Free” and “Not Free” subsets.

Chapter 9. Considerations

As stated earlier the Worldwide Governance indicators are perception-based indicators and therefore any results based on analyses that include these indicators should be interpreted with caution. Multiple scholars have explained the potential pitfalls from using Worldwide Governance Indicators. Kurtz and Schrank (2007), note that a strong economy can elicit responses from “both elites and citizens affirming good governance” regardless of the quality of governance. Treisman (2007) suggests that cross-country empirical studies could just be a collation of expert suppositions or biases; for instance high control of corruption grades could be given to a democratic country in the belief that democracy reduces corruption. Further corroborating this perspective Donchev and Ujhelyi (2008) and Razafindrakoto and Roubaud (2006) showed that household surveys elicit corruption experiences that vary from corruption perceptions by “experts.”

Other scholars have highlighted the endogeneity in the relationship between the Worldwide Governance Indicators, therefore ruling out the ability to measure aggregate indicators that truly reflect each composite measure of governance. For instance Damania, Fredriksson, and Mani (2004) state that political instability impairs rule of law, in turn stimulating corruption.

Similarly Thomas (2007) highlights the tautological relationship between political freedom, and freedom from pervasive corruption. Thomas (20027) also states that the Worldwide Governance constructs themselves are multi-faceted and there is no theoretical basis in the creation of the weights within the constructs.

Van de Walle (2006) suggests that aggregating indicators is a trade-off between reliability which is gained by aggregating, and precision which is lost by it. Brewer et al. (2007) reiterates this by stating that the very high correlations between Voice & Accountability, Control of Corruption, and Government effectiveness and another indicator such as the level of national income are likely to increase reliability due to the absence of random errors of measurement, however they may also reduce validity.

Criticism to the use of Worldwide Governance Indicators should be duly noted. However the reality is that there are no other indicators as comprehensive in terms of years and countries for the measurement of governance. These indicators therefore will remain the best source of data for cross-country, as well as cross-national, year-on-year data, and will consequently continue to be utilized by quantitative researchers.

Chapter 10. Conclusion

The findings of the initial analysis in which the whole dataset of 147 countries was used, indicate that the null hypothesis can be rejected; proving that years of educational attainment in at least one of its levels; primary, secondary, tertiary predict quality of governance. However further analysis proved that this relationship only exists in democratic countries in the “Free” subset. Countries in the “Partly Free” and “Not Free” subset indicate that there are barriers associated with authoritarianism that prevent years of educational attainment from positively influencing quality of governance. These barriers are likely related to cronyism, nepotism, and corruption, leading to the underperformance of public employees regardless of their educational attainment.

Authoritarian regimes are also likely to vigorously suppress freedoms as society becomes more educated and consequently more outspoken. This is indicated by the negative correlation between years of secondary and tertiary educational attainment and Voice & Accountability in “Partly Free” and “Not Free” countries.

The data also indicates that higher levels of education could lead to an increase in political demands that ultimately lead to instances of political instability, followed by transition to democracy. However corroborating this indication demands rigorous analysis beyond the scope of this thesis.

In addition several key relationships with the primary control variables emerged. Population growth has an overall positive effect on governance, thus disproving the defeatist perspective of the Neo-Malthusianism view; that sees population growth causing political instability and

violence due to the scarcity of resources. Total population size indicated challenges to achieving quality of governance in larger populations in regards to government effectiveness and control of corruption. GDP per capita growth and urbanization as representative of modernization have little significance to quality of governance. Meanwhile the correlation between urban population and political stability indicates a negative relationship that might be fueled by the expansion of unofficial housing in urban cities and the socio-economic challenges that accompany it. As expected natural resources rents had a negative influence on quality of governance. The absence of any correlation between natural resources rents and political stability indicates refutes claims that natural resources rents impede democracy/good governance due to increased conflict, thus supporting the arguments that quality of governance is impeded due to authoritarian measures preventing political entry. On the correlation between democracy and governance, we found that the Polity score which signifies; competitiveness of executive recruitment, openness of executive recruitment, constraints on the chief executive, and competitiveness of political participation, is a positive predictor for the quality of governance in the majority of its indicators.

Chapter 11. Recommendations

The main finding of this thesis is that the revised version of modernization theory, championed by Inglehart et al. (2010) applies to the development of quality of governance; in that quality of governance is not dependent on uniform predictors with broad influence across all countries and cultures. As Inglehart et al. (2010) clarified; deeply-instilled attitudes among the public of a society play a big role in determining the predictors of governance quality, as was shown by the radically different results between the three subsets of “Free”, “Partly Free” and “Free.”

It is therefore imperative that international development organizations and donor governments not consider one-size-fits-all solutions when initiating programs with aim of enhancing governance quality. Ample time and resources should be spent on understanding the culture within a recipient country, and on gauging the country-specific predictors of quality governance.

Finally in order for statistical analysis models to be relevant in identifying and explaining predictors of governance they need to focus on subsets of countries with similar “deeply-instilled attitudes” as per the revised version of modernization theory. Using large datasets while statistically healthy, would potentially compromise nuances in cultural variables and lead to generalized findings that are unfortunately of little practical significance.

Appendices

Appendix 1: Worldwide Governance Indicators

“(a) The process by which governments are selected, monitored, and replaced:

1. Voice and Accountability (VA) – capturing perceptions of the extent to which a country's citizens are able to participate in selecting their government, as well as freedom of expression, freedom of association, and a free media.

2. Political Stability and Absence of Violence/Terrorism (PV) – capturing perceptions of the likelihood that the government will be destabilized or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism.

(b) The capacity of the government to effectively formulate and implement sound policies:

3. Government Effectiveness (GE) – capturing perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government's commitment to such policies.

4. Regulatory Quality (RQ) – capturing perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development.

(c) The respect of citizens and the state for the institutions that govern economic and social interactions among them:

5. Rule of Law (RL) – capturing perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence.

6. Control of Corruption (CC) – capturing perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private interests” (Kaufmann, Kraay & Mastruzzi, 2011).

These six aggregate dimensions of governance provide a useful way for “thinking about governance issues as well as a useful way of organizing the available empirical measures of governance” (Kaufmann, Kraay & Mastruzzi, 2011).

Appendix 2: Freedom House Methodology

“Political Rights and Civil Liberties Ratings – A country or territory is assigned two ratings (7 to 1)—one for political rights and one for civil liberties—based on its total scores for the political rights and civil liberties questions. Each rating of 1 through 7, with 1 representing the greatest degree of freedom and 7 the smallest degree of freedom, corresponds to a specific range of total scores” (“Methodology | Freedom House”, 2016).

“Free, Partly Free, Not Free Status – The average of a country’s or territory’s political rights and civil liberties ratings is called the Freedom Rating, and it is this figure that determines the status of Free (1.0 to 2.5), Partly Free (3.0 to 5.0), or Not Free (5.5 to 7.0)” (“Methodology | Freedom House”, 2016).

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